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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/817,361	03/20/2001	Natalia I. Afanassieva	AFAN-003	2342

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EXAMINER

PASS, BARRY

ART UNIT	PAPER NUMBER
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3737

DATE MAILED: 04/25/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/817,361

Applicant(s)

AFANASSIEVA, NATALIA I.

Examiner

Barry Pass

Art Unit

3737

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 February 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 March 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Objections

1. The examiner's objections to Claim 8 has been overcome by the applicant's amendment to the claims.

The objection to Claim 8 is withdrawn.

2. Claim 1 is objected to because of the following informality: in line 16 the step is incorrectly labeled "(d)." Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The rejection of Claim 2 under the second paragraph of 35 U.S.C. 112 has been overcome by the applicant's amendment to the claims.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-4 are also rejected under 35 U.S.C. 103(a) as being unpatentable over Kittrell in view of Clift US 5,452,716. Kittrell et al. discloses a spectral diagnostic system consisting of a percutaneous laser catheter (abstract) operating with a plurality of wavelengths, in particular

consisting of an IR source (column 7, line 64), fiberoptic light guide comprising fibers with and without cladding (column 13, lines 7-10), coupling means for the fiber optic, IR detector for reflected or otherwise altered radiation received from a biological sample, spectrum analyzer (column 19 line 41) and spectrofluorimeter (column 2 line 59), and quantitative analysis of the peaks of the detected spectra to compare healthy and diseased tissue (column 24-25). Kittrell does not specifically teach Fourier Transform IR spectroscopy (FTIRS). Clift teaches in column 2, lines 45-49, the use of ATR and FTIRS for detected radiation from a biological sample. It would have been obvious to someone of ordinary skill in the art at the time of the invention to use a FTIRS for spectral analysis of the radiation reflected from a biological sample to produce a detailed and essential description of that radiation and hence of the state of the biological sample. Further, it would have been obvious to someone of ordinary skill in the art at the time of the invention that spectral analysis of detected IR radiation can be performed with a standard Fourier spectrophotometer operating in the range of 2.5 to 20 micron, or in any desired range to determine individual frequency components of the composite spectrum and their characteristics that reflect the state of the biological sample being analyzed. It also would have been obvious to employ the practice well known in the art of using catheter systems with means for changing probes.

6. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kittrell as applied to claim 1 above, and further in view of Haaland et al. US 5,596,992. Kittrell discloses the system as recited in claim 1. Kittrell does not teach spectral analysis with a probe using attenuated total reflectance (ATR). Haaland et al. teach in column 6 near-infrared in vivo fiber-optic probe for in vivo detection of cancer and for biopsies to classify cells, in column 6-7 ATR employed in the

mid-infrared to potentially increase sensitivity of cytology, histopathology, and in-vivo surface sampling, an infrared microscope coupled with an ATR used for cytology and histopathology samples. Accordingly, it would have been obvious to someone of ordinary skill in the art at the time of the invention to adapt the laser probe system for spectral analysis of Kittrell et al. to perform ATR spectroscopy to increase sensitivity of tissue analysis.

7. Claims 6-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kittrell et al. in view of Haaland et al., further in view of Clift. Kittrell et al. discloses a spectral diagnostic system using quantitative analysis of the peaks of the detected spectra from healthy and diseased tissue (column 24-25). Haaland et al. teach in column 6 a near-infrared in vivo fiber-optic probe for in vivo detection of cancer and for biopsies to classify cells, in column 6-7 ATR employed in the mid-infrared to increase sensitivity of cytology, histopathology, and in-vivo surface sampling. Kittrell et al. and Haaland et al. do not teach Fourier analysis of detected radiation. Clift teaches in column 2, lines 45-49, the use of ATR and FTIRS for detected radiation from a biological sample. It would have been obvious to someone of ordinary skill in the art at the time of the invention to use ATR and FTIRS for spectral analysis of the radiation reflected from a biological sample to produce a detailed and essential description of that radiation and hence of the state of the biological sample. Further, it is well known in the art that quantitative analysis of spectra requires analysis of peak position, height, and enclosed area, and comparison of spectra would include ratios of these parameters.

Response to Arguments

8. Applicant's arguments filed February 19, 2003 have been fully considered but they are not persuasive.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., use of bare, uncladded optical fibers and measurement of molecular composition and chemical bonds) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

While the applicant contends that Kittrell et al. '173 teach away from using bare fibers, Kittrell does teach a fiberoptic light guide comprising fibers with and without cladding (column 13, lines 7-10). Further, the applicant's assertion that Kittrell is not applicable because Kittrell teaches elements (an optical shield) not taught in the invention is not found persuasive. A reference disclosing more elements than is required by the claim does not render that reference inapplicable as prior art.

Finally, it is noted the applicant has not argued the combinations of references other than stating the above objections to Kittrell.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Wach et al. US 6,370,406 teach a fiber optic probe for spectrographic analysis, operating in the infrared, using optical fibers with or without cladding.


10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Barry Pass whose telephone number is (703) 305-0726. The examiner can normally be reached on Monday-Friday, 8am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marvin Lateef can be reached on (703) 308-3256. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-0758 for regular communications and (703) 308-0758 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0873.

Barry Pass 
April 18, 2003


Marvin M. Lateef
Supervisory Patent Examiner
Group 3700